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to present to the American public the views of foreign countries on the food embargo, and no one knows better than the citizens of the oldest republic in existence, Switzerland, that in the people themselves lies the ultimate verdict, and that is why we Swiss and we neutrals are justified in the assumption that a just solution of the food embargo will be found in the United States.

## THE FOOD SITUATION OF NORWAY

BY FRIDTJOF NANSEN, D.Sc., D.C.L.,

Minister Plenipotentiary of Norway on Special Mission.

In spite of its great extension, Norway has not more than two and one-half million inhabitants. Our country thus has one of the smallest populations of any country in Europe though Norway is one of the oldest kingdoms existing. Though we are small our history may, however, be said to have proved that the Norwegian people possess some good qualities, ever since the days when the Norsemen were the first to cross the Atlantic Ocean and reach the shores of the new world where they established permanent colonies in Greenland. The Norsemen were, and are still, a strong race with a high degree of vitality which is proved for instance by the unusually low death rate in our country. For this and other reasons our people have during the last century increased in number more than any other European people. The increase of our population was on the basis of 100 to 254. If it had not been for the emigration, especially to this country, this increase would have been much greater. We have the doubtful honor of being that European country which next to Ireland has sent comparatively most emigrants across the ocean. In the latter half of the past century one-half million people left Norway and in the ten years from 1901 to 1910 no less than 190,000 left the country. In many years the emigration was more than half the increase by birth and in some years even more than the whole increase by birth. There are now said to be in this country one and one-half million Norwegians of the first and second generation.

The important question in connection with the subject interesting us at present is: How do the people of Norway live? What are their means of existence?

At all times agriculture and dairy farming or animal industry were by far the most important means of existence in Norway. The average value of the yearly agricultural production may be estimated to amount to something like two hundred million kroner, or between two hundred and two hundred and fifty millions.

A very important industry of the Norwegian people is the lumber trade. The total value of the production of this trade is not easy to estimate as so much of it is used at home on the farms. But the average value of the yearly export of the production of the forests was in the years 1906 to 1910 about eighty million kroner.

Our fisheries are naturally also of great importance and certainly not less so in late years. The value of the total catch of fish considered as raw material was for instance in 1910, sixty-eight million kroner, the value of our whaling fisheries being included. The export value of our fish and fish products is naturally considerably higher.

Especially in late years, manufacturing industry has become a very important factor in our national economy. In 1910, for instance, the value of our export of industrial products, mining products not included, was one hundred and ten million kroner. Here, however, are included certain products of the lumber trade such as pulp, chemical pulp and paper. But the export of industrial products has increased very much for every year after 1910.

Finally may be mentioned our shipping, which is of very great importance to the Norwegian people and, I may say, also to several other nations, and certainly not less so during this war. The Norwegians were always a seafaring nation ever since the days when our ancestors were the horror of the coasts of Europe, until this day when we are a preëminently peaceful people and wish to remain so. though it cannot be denied perhaps that still a little of the old adventurous spirit is burning in us.

Our poet Björnson has said: "*Vor ære og vor magt har hvite seil os bragt*" (i.e., our honor and our position we owe to our white sails). This is largely true even today though our white sails have now to a great extent been replaced by the black smoke of our steamers.

Though, as I said before, agriculture is the most important industry of the Norwegian people, the agricultural production must not be expected to amount to very great quantities for it has to be

considered that only  $2\frac{1}{2}$  per cent of our land area is cultivated. If we also include in this calculation natural grass fields not ploughed, we reach about 4 per cent. This may seem a very small proportion of a country supposed to be inhabited by a civilized people; but it has to be considered that about 70 per cent of our extensive land area is occupied by mountains, snow mountains, glaciers and entirely barren ground. About 21 per cent of the total area is covered with forest. Also in this respect—the very small percentage of cultivated area—our country is unique amongst European countries. For the sake of comparison I may mention the following figures.

Finland is the country that comes next to us with a cultivated area of between 10 and 11 per cent of the total land surface; then comes Sweden with 12 per cent. Very different are the conditions in Denmark where 73 per cent of the total land area is cultivated. It is also of interest to notice that in mountainous Switzerland the cultivated land is 56 per cent of the total area.

Though very much has been done in order to develop our agriculture in every respect, it has not been possible to increase its production at the same rate as the population has been growing. Nevertheless, our agriculture may be said to have a fairly high standing. The cultivated ground yields, for instance, a much greater crop per acre than in most countries. This is largely due to our small holdings causing the soil to be better worked and manured. As, however, our cultivated area is comparatively so small, we are not able to produce more than a certain portion of the grain we need for living. This portion varies naturally somewhat with the harvest in the different years, but on the average it has lately been between one-third and one-half of the total amount we need. We have therefore had to import all the way from an equal quantity to double as much as we produce ourselves.

As an illustration it may be mentioned that during the three last years before the war, 1911 to 1913, our total import of grain and flour of all kinds (not including Indian corn chiefly for feeding animals) was on the average of 425,000 tons while our home production of grain during these years averaged 311,259 tons.

In the three years 1914 to 1916, that is during the war, the average import reached only the amount of 389,536 tons while our home production averaged 303,314 tons. It is thus seen that our import of grain as well as our home production has been less during the years of the war than before this time.

In the figures of our home production just given our crop of potatoes has not been included. If this be done the proportion between home production and import for human food will be somewhat different. In order to make the figures comparable, the nutritious value of the potatoes as well as that of the different kinds of grain has to be transferred to the value of one special kind of grain as a standard, and in our statistics barley has been chosen for this purpose. In order to give an impression of the change which has taken place in the proportion between home production and imports the figures obtained for a few different years may be useful.

|            | <i>Home Production</i> | <i>Import</i> |
|------------|------------------------|---------------|
| About 1855 | 75.0 per cent          | 25.0 per cent |
| “ 1900     | 42.9 per cent          | 57.1 per cent |
| “ 1911     | 38.8 per cent          | 61.2 per cent |
| “ 1914-16  | 42.3 per cent          | 57.7 per cent |

It will thus be understood that the proportion of the home production as compared with the import of grain has been constantly sinking during this time until about 1911 or the years before the war, but during the war it has again been somewhat increased. This is due to our natural desire to decrease our dependency on the import of grain as much as possible. The land area cultivated has been increased, especially this year, and our government has stimulated the agricultural production in every possible way by allotting free soil, by minimum prices, by importing fertilizers and reselling them at a sacrifice, etc. We therefore hoped that this year's crop would be essentially increased from what it has been in former years and the outlook early in the summer was also quite good; but a very long and continuous period of drought has spoiled our good prospects and, as I now have learned, much rain during the collecting of the crop, which is now going on, has caused serious difficulties.

If we take our imports of grain and our home production, the total average quantity of grain and flour available for consumption during the years 1911 to 1916 has been 715,000 tons per year. We might thus calculate the consumption at 60,000 tons per month, but here is also included seed as well as grain used for feeding animals. After having deducted the quantities necessary for these purposes, and considering that our population is two and one-half million inhabitants, we find that during the six years 1911 to 1916

the consumption of grain per head averaged 232 kilograms, or about 600 grams per day.

Before the war we received our greater part of grain and flour from Russia, Germany and Roumania. From the United States we only received a comparatively small portion which in the years 1911 to 1913 averaged 8 per cent of our total imports. In 1914 it was increased to 43 per cent which means that after the outbreak of the war in August the United States supplied us with practically all the grain and flour imported. In 1915 United States sent us 98 per cent and in 1916, 99 per cent of our total import of grain.

Though it is unnecessary, I may still mention here that we have naturally had no export of grain either before or after the outbreak of the war, with the exception of some diminutive quantities confined almost exclusively to a little grain and flour sent to the Pomors or inhabitants of northern Russia on the Kola Peninsula and a little trade across the frontier to the nearest districts of Sweden. There is of course prohibition against all exports of grain and cereals and no licenses are given for this frontier trade, except in accordance with the agreement with Great Britain.

The different kinds of grain as well as potatoes are naturally the chief sources of the *carbohydrates* necessary for the sustenance of the Norwegian people. But in this connection ought also to be mentioned sugar, though of less importance. No sugar is raised in Norway, and we therefore have to import all we need, which has on the average amounted to between 49,000 and 55,000 tons of sugar a year, corresponding to a consumption of about 50 grams per individual per day, or something like 20 kilograms in a year. This is much less than most other people consume. Of course we do not export sugar, except some few tons, 80 or 90 tons, that go across the frontier in the same way as the grain before mentioned.

Having thus mentioned the quantities of food containing carbohydrates consumed by the Norwegian people, I now propose to discuss another important part of the food, namely the fats. I may then first point out in general that the investigations on the nutrition of the Norwegian people show that their consumption of fats is relatively great as compared with that of the more southern nations of Europe. This is naturally explained by the climate of our country and by the hard work of the people and their way of living. The average low temperature and the long

winter make a greater production of the heat of the body necessary and besides this it is also to be considered that a comparatively great proportion of the men, fishermen, laborers in the forest, etc., have very hard work in the open air under severe climatic conditions. And it is a well-known experience that under such circumstances the increased need of food has chiefly to be covered by fats.

The average consumption of fat by a man in our country who has not hard work, amounts to about 100 grams of fat per day. By harder work his consumption is increased to 130 to 150 grams, and by work in the woods during the winter it is increased to 200 grams per day, a great portion of our men being engaged in this kind of work, especially in eastern Norway. This consumption of fat may be said to agree well with the conditions in the United States and Canada. According to his investigations on the food of the people in the United States and Canada, Professor Atwater, in his book *Methods and Results of Investigations on the Chemistry and Economy of Food*, calculates that the consumption of fat per individual should be about 158.5 grams per day. Assuming that the population of Norway, somewhat more than two and one-half million inhabitants, corresponds to a little more than two million of what might be called standard men, and if we further assume that these standard men need only 100 grams of fat per day, this will make a consumption of about 74,400 tons of fat for the whole of Norway per year. This quantity is, however, a minimum. As I said before, a great part of the population of Norway has hard work at comparatively low temperatures which will naturally increase the craving for fat, and if we increase the consumption of fat, for instance with 30 grams per day, it will make the quantity of fat needed for feeding Norwegian people in the year as much as 96,725 tons.

A careful calculation of Norway's production of fat which can be used for human food shows that it is about 53,700 tons per year on the average. In this quantity is included the fat of animals, cattle, sheep, swine about 15,000 tons, fat of milk and milk products—butter, cheese, etc.—with about 35,500 tons. Herring oil which is not used for human food is not included, but on the other hand, the fat contained in fresh and salted fish from the home fisheries is included in our calculation. All figures are calculated as net values, i.e., the quantity that is really available in the human organism.

If we take the calculation of our needs based upon 100 grams

of fat per day per each standard man, Norway will have a deficit of about 21,000 tons of fat per year which has to be imported. This is, as pointed out before, a minimum. With the consumption of 130 grams per man per day the deficit will be 43,000 tons. If we now look at our imports of fats and oils for human food we find that they agree very well with this more theoretical calculation. In the three years 1911 to 1913 our average yearly import of fats was 21,000 tons. In the three years during the war, 1914 to 1916, the average import was somewhat higher, namely 26,400 tons. If we take the imports for each year we find, however, that they were on the whole increasing somewhat even before the war. The increased import of fat after the outbreak of the war is also to a great extent explained by the decrease in our supplies of meat and pork, which decrease was very considerable if we consider the difference in import of live stock and our home production.

If it be considered that the quantities of fats mentioned are not net values, it will easily be understood that the people of Norway are decidedly not overfed, in regard to fat.

There still remains a very important part of foodstuffs and that is everything belonging to what is called with a general name—*protein*—contained chiefly in meat, fish, and also to some extent in grain. If we take it that each individual will want about the same daily ration of protein as fat it means that the yearly consumption of protein should also be about 74,000 tons. Of this we produce about 70,000 tons ourselves and consequently we should only be 4,000 tons short in this respect, a shortage which may easily be covered.

I have described the situation of the Norwegian people as to their food supplies and have tried to give you an idea of what we actually must import from abroad in order to live without suffering. Of course there are also many other things which we must import, for instance, material for our shipbuilding, raw material for our manufacturing industry, manufactures of various kinds, etc., which also are very necessary for our existence as a nation, but which now, when it is a question of to be or not to be, are not so important as the food.

The next question now is how the Norwegian people can obtain the means to cover the deficit in the balance of trade caused by the importation of these foodstuffs and other necessary articles.



For this purpose our fisheries are naturally of great importance producing some of our chief products of export. Altogether the value of the exported products of our fisheries averaged before the war about 100 million kroner a year. Besides England and Germany, Spain and Italy were very important markets for our fishery products before the war. During the war these markets have to a great extent been closed to us owing to the difficulty with tonnage. Our chief market now is England and also Germany. But I may mention that our export to Germany is now carried on in strict accordance with agreements with England, not allowing us to export more than a certain proportion of our catch to her enemy.

The products of our lumber trade consisting of timber, sawn timber, planed wood, manufactures of wood, pulp, chemical pulp, paper, etc., are naturally also of much importance for our balance of trade.

But besides this the exportation of products of the various other branches of our manufacturing industry becomes every year more and more important as was pointed out before. The export of our industrial products gave in 1910 an income of one hundred and fourteen and one-half million kroner, and this value has been substantially increased during recent years. The chief buyers of these industrial products during the war have without comparison been England and her allies, and our electro-chemical production has been especially valuable. This industry, used to a great extent to produce raw material for the agricultural and manufacturing industry of Germany, has during the war more and more become producer for England and her allies, especially France. The products we send them have been, as I understand it, of the very greatest importance. I may as an example mention the ammonium-nitrate sent to England, and especially to France. I may also mention other products as for instance cyanamid and also aluminum. According to what I have been told, a reduction or a stop of the exportation of these products would mean a very serious loss for your allies.

There is still left one branch of trade which is of the very greatest importance for our balance of trade, and that is our *shipping*. In order to give you an idea of how matters stand in this respect I may tell you that the average value of our *imports* in the four years from 1911 to 1914 inclusive was five hundred and sixty-one

million kroner, while the average value of *exports* during the same years was three hundred and ninety-one million kroner. This makes an average deficit of one hundred and seventy million kroner which is chiefly covered by our shipping. This shipping has during the war naturally to a great extent been directed to the shores of England and her allies as well as to this country, and—as you are probably aware—there has been and still is a great portion of our fleet sailing between United States and the West Indies and South America and also on your Pacific coast. Our shipping between Great Britain and her allies was not considered with friendly eyes by the Germans, and their U-boat warfare has to a very great extent been directed against our shipping, and our losses have therefore been heavier than those of any other neutral nation and I believe also greater than the losses of this great country until now. I cannot give you the exact figures at this moment, but I do not say too much when I say that one-third of our commercial fleet has been destroyed. It means that about one million Norwegian tons have been sunk and about 700 Norwegian sailors, or now probably more, have been killed. In spite of this the Germans have not been able to terrify the Norwegian sailors. I was told of only one instance when a Norwegian sailor refused to go because the ship was going to the war-zone. The consul in that port told him that he was very sorry to hear it because it was the first instance in his experience that a Norwegian sailor had refused to go because he was afraid. The sailor said nothing, went on board and did his duty.

I saw a report the other day of the sinking of a Norwegian vessel off the English coast. One of the surviving sailors was examined before the maritime court in London, and was asked whether he had been sunk before. He answered that this was the sixth time. On the suggestion of the judge that now he had probably got enough of it, he declared that he was of course going out again as soon as he could find a new employment.

But the destruction of our commercial fleet is constantly going on, and if this lasts very long the prospects are that it will be entirely destroyed. The Norwegians will no more belong to the seafaring nations—we who used to have the third commercial fleet in the world. We came next after England and the United States and were only in late years surpassed by Germany.

I have tried to give you an idea of the situation and the needs

of the Norwegian people. We are a small nation, that is true, of no great consequence in the world perhaps, whatever we ourselves may think, but still we are a nation, and we beg for nothing, we only ask for our right to exist. We consider it our duty to remain neutral and do our best to keep out of the war. We think that in this way we may also do the greatest service to the world.

We are of those who, in spite of all,

Never doubted clouds would break,  
Never dreamed, though rights were worsted, wrong would triumph,  
Held we fall to rise, are baffled to fight better,  
Sleep to wake.

May all humanity awaken after this terrible crisis—I think the most serious one in the whole history of the world—may we awaken to see that there is one great purpose in life and that is not *destruction* of others, it is *development* of oneself, of all one's possibilities; that there is one high ideal of existence. Its name is not *power*, its name is *justice*!

## SOUTH AMERICA'S AVAILABLE FOOD SUPPLY

BY HIS EXCELLENCY, SENOR DON IGNACIO CALDERON,

The Bolivian Minister.

All know that South America is a very vast continent, full of possibilities and great in resources, where ten independent republics are established, each one with its own characteristics; therefore, to speak of South America as a unit is misleading and inaccurate.

For instance, if we say that South America produces a great deal of wheat, it would mean that wheat is produced for export in all the countries. That is not the case. Wheat is not produced for export except in Argentine. If we say that tin is exported from South America, we also make a wrong statement, because tin is produced only in Bolivia, which gives to the world one-third of the production of that mineral. Therefore, it is not correct to say that tin is produced in South America.

I am going to give you a review of the exportable food resources of each of the countries in South America.

Agriculture is not very much developed in those republics